



Farmers Grow MyPlate: Exit Report Successes & Findings





What is Farmers Grow MyPlate?

- Farmers Grow MyPlate is an interactive program aimed at educating youth ages K-5 enrolled in schools, summer programs, after-school programs, and child care centers more about the 5 food groups of MyPlate and how they are produced for consumption.
- Schools were given sub-grants to cover the costs of supplies purchases, travel arrangements, and other implementation costs. Schools were also supplied with lesson binders for each food group, an implementation guide, and a kit of supplies.

Sample Lesson

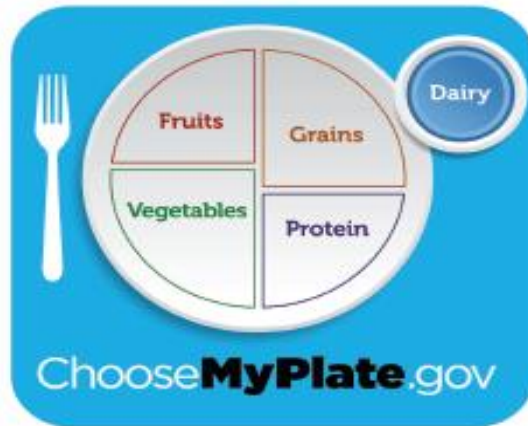
2015

Farmers Grow MyPlate

Team Nutrition Student Curriculum

South Dakota State University

MyPlate Dairy Group



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Dairy Group Planning Guide

Lesson	Equipment/Supplies	Duty	Person
Nutrition	Vote for Dairy: Voting Chart, bone markers, "Dairy Group": poster, Rethink Your Drink: "Rethink Your Drink" poster, beverage/sugar cards, sugar/sugar cubes, cups		
Food Preparation	Nectarine Smoothie: picture instructions, soft fruit, yogurt, orange juice, honey, blender Making Mozzarella: picture instructions, rennet tablet, skim milk, salt, microwave		
Production	Dairy: Ag Census Maps		
Physical Activity	Vocabulary Shuffle: vocabulary letters, Dairy Action Bingo: Bingo Cards, music		
Arts & Crafts	Milk for Mighty Bones: Sample Posters from Milk Promotion Campaigns, paper, markers/crayons Udderly Art: latex gloves, pin, paint, paper, cardboard bones,		
Review/ Wrap-Up	Memory Game Cards		

Sample Lesson

Nutrition

Vote for Dairy 10-15 Min.

1. Post the [Dairy Group](#) poster.
2. Assemble the voting chart to look like the diagram below. Display at the front of the room.
3. Tell the students:
 - Dairy products provide health benefits in the form of calcium, potassium, and vitamin D.
 - Calcium builds bones and teeth. Potassium maintains healthy blood pressure.
 - Vitamin D helps the body use calcium and phosphorus in the bones.
 - Getting enough calcium is especially important for stu-



"Get Your Calcium-Rich Foods"

dents and teenagers when your bones are growing.

- Not everyone likes the same dairy foods so lets see where you get calcium, potassium and vitamin D.

3. Instruct the students: Come to the chart one at a time. Place a bone sticker on the chart in one or more of the columns that show where you get your bone-building nutrients.

4. Tally the results to see what is most popular.
Process: Ask the students to name a food from a column that they did not select and plan how to try it as a snack or meal this week.

Fluid milk (white or flavored)	Cheese and cottage cheese	Yogurt	Calcium-fortified beverages—soy or almond milk, orange juice	Fortified cereal	Dark green vegetables

Nectarine Smoothie



Serving Size: 1/2 cup Serves: 20

Ingredients for 20:

- 6 nectarines
- 6 peaches
- (Other soft fruit may be substituted.)
- 4 1/2 cups plain, unsweetened yogurt (or milk)
- 4 1/2 cups orange juice
- 6 tablespoons honey

Per blender jar:

- 1 peach
- 1 nectarine
- 3/4 cup orange juice
- 3/4 cup yogurt
- 1 tablespoon honey

Remember to follow the MyPlate Tasting Code. Collect a Two Bite Certificate if you have not tasted this before.

Utensils:

- Blender
- 2 large pitchers
- 6 small bowls
- Measuring spoons
- Measuring cups
- Child safe knives
- Cutting boards
- Cups

Preparation:

1. Wash peaches and nectarines (or other soft fruit).
2. Cut the peaches and nectarines into wedges and then remove the pits. Observe the aroma, color, and shape of the fruit. Place the fruit into a bowl.
3. Assign each student to measure a different ingredient. Take turns filling the blender. Mix the smoothie until creamy. Serve from the pitchers.



Source: Kids Cook Farm Fresh Food

Sample Lesson

Making Mozzarella 30 Min.

1. Ask the students:

- How does milk become cheese?
- How do we get different kinds of cheese such as Swiss or cheddar?

"We will learn about protein coagulation or clotting and the role of enzymes in the making of cheese."

2. Day 1—prepare for making mozzarella.

In pairs of students:

- Crush 1/4 rennet tablet and put into a 16-ounce Styrofoam cup.
- Add 1/2 teaspoon of salt per cup
- Add 6 ounces of skim milk heated to 100 degrees and stir well.

The milk will coagulate in the cup overnight.

3. Day 2

Tell the students:

"Milk has molecules in it that are called proteins. Coagulation happens when protein particles in the milk stick together. Heat, stirring, or enzymes make this happen. For example, you can

*beat protein in cream into whipped cream,

*cook egg protein to make a fried egg

*turn milk protein into cheese or yogurt or sour cream with enzymes

We will learn how milk becomes cheese using the 'Jumping Jacks' model."

Have students demonstrate:

Have students hold out arms and legs in a jumping jack position to become "protein molecules".

Explain:

"Adding an enzyme to milk causes the protein molecules to join together."

Demonstrate this by having the students line up touching hands and feet together.

"We can add heat and stirring to squeeze the water out."

Push students closer together so that spaces between them get smaller.

"This is how we get cheese like the mozzarella we will make today."

4. Prepare the mozzarella.

- Microwave for 1 minute. (4 cups can be in the microwave at one time.)
- Pour the microwaved, coagulated mixture through a strainer held over a dishpan.
- Put coagulated milk back into the cup and microwave 10 more seconds.
- Repeat microwaving and straining until cheese becomes soft mozzarella—usually two more times.
- "Dry" the cheese with a paper towel. Sample the cheese.



Processing Questions:

Q. What are the steps from milk to mozzarella?

A. Add salt and rennet to skim milk, let set overnight, heat and drain the whey, dry

Q. What caused the changes in the ingredients?

A. Addition of the rennet (an enzyme), heating to speed the reaction, heating, stirring and draining to remove the whey.

Production

From Moo to You 60 Min.

Ask the students: "Do you know what the old fashioned hand milking process is like?" Solicit suggestions or demonstrations.

Tell the students:

"Today we will learn about running a dairy farm and then see how milk is processed into some of our favorite foods. Think about the differences in milking methods between the next two videos that you will see."

From Moo to You: The Story of Milk (This is a commercially produced video so there is some advertising.) 13.5 min.

<https://www.youtube.com/watch?v=5ie-4H4TC4k>

Milk: How it's Made 6 min.

<https://www.youtube.com/watch?v=4Dn64cY8P24>

Optional—*America's Heartland Dairy farm Stop* at 7 min.

<https://vide.livis.com/video/4505120470/>

Ask the students:

- How would you describe a dairy cow? (Perhaps: large, gentle, large udder, usually two colors—black/white spots, golden brown/white spots or brown shading into black, likes a schedule, grows slowly, eats and



drinks a lot)

- What equipment did you see that you didn't expect on a dairy farm? (Perhaps: refrigerated trucks, chiller, computerized neck tags, automatic floor cleaners, robotic milking machines, microscopes, milking parlor)

To see several milk-based products being processed view one or more of the following:

From Farm to Store 5 min.

<https://www.youtube.com/watch?v=3T5007From-Farm-to-store-video/>

How it's Made Yogurt 4.5 min.

<https://www.youtube.com/watch?v=3ecB1274hig>

How it's Made Mozzarella Cheese (for older youth)

4.5 min. <https://www.youtube.com/watch?v=VmoLec-Flw3I>

Show the **Dairy Ag Census Maps**. Ask the students:

- How does SD compare with other states in milk production? (Some dairy farming but not much compared to Wisconsin, California, New York, Washington, and New Mexico.)
- Where do you see most of the dairy farming in SD? (Eastern edge.)
- What about our state's dairy farming area makes this a good fit? (Grows corn and soybeans for feed, lots of land, near transportation routes, workers available.)

Process:

Q: Running a dairy farm requires a lot of skills. What chores do you remember that the dairy farmer needs to do?

A. Grow the feed, feed the cow, water the cow, clean the pen, transfer the manure back to the field, check the cow's health, feed the calves, grow the calves, arrange

Field trip option

If a field trip to a dairy farm is possible, ask questions to have the farmer address the following concepts:

- What is your day like?
- What is your milk used for?
- What equipment do you use? Observe some equipment.
- What kind of cows do you have? How do you keep them healthy?
- What do you like best and least about running a dairy farm?

If you are visiting a milk processing plant ask:

- What is your day like?
- What is your milk used for?
- What equipment do you use? Observe some equipment.
- Where is your product sold?

Sample Lesson

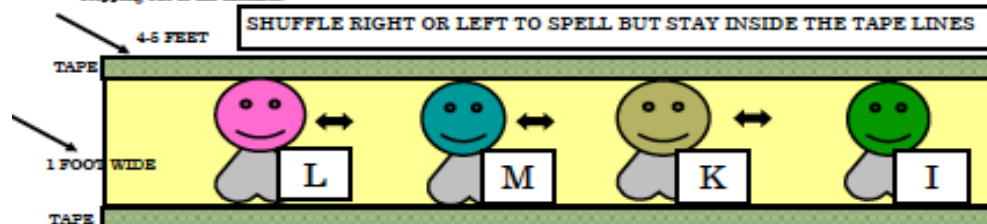
Physical Activities

Vocabulary Shuffle 10-15 Min.

1. Place two rows of tape on the floor in a channel that is 4-5 feet long and about 1 foot wide. Increase difficulty by narrowing the channel.
2. Place students into teams of 3, 4, or 5 to match the number of letters in the list of words chosen. Instruct them to stand in a row between the two marked lines.
3. Copy and cut apart cards with the letters of each word.
4. Give each student one letter from the chosen word but in mixed order.
5. Have them spell the word by moving right or left across each other between the markers on the floor without stepping out of the channel.
6. For young students post the completed word for reference to the spelling. For older students tell them the word and they will rely on memory for the spelling.

Processing:

- Q: How did you move to hold your balance?
- Q: How does the word describe the dairy food group?



3 letter words	4 letter words	5 letter words	6 letter words
Cow	Milk	Dairy	Cheese
Cup	Farm	White	Yogurt
Day	Feed	Black	Milker
Soy	Calf		

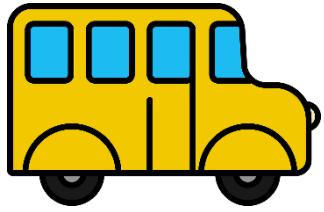
Art Activity

Udderly Art 15 Min.

Supplies: latex gloves, cardboard boxes, white drawing paper, paint shirt

1. Poke small holes in one finger tip of a latex glove.
2. Fill partially with one color of water based paint (tempera or acrylic craft paint).
3. Close the top with a clip or rubber band.
4. Add additional gloves each with a different color.
5. Place a piece of white paper in the bottom of the cardboard box to protect other surfaces.
6. Children can "milk" the glove and have it drip and squirt onto the paper to create a design.
7. Label and set aside to dry.

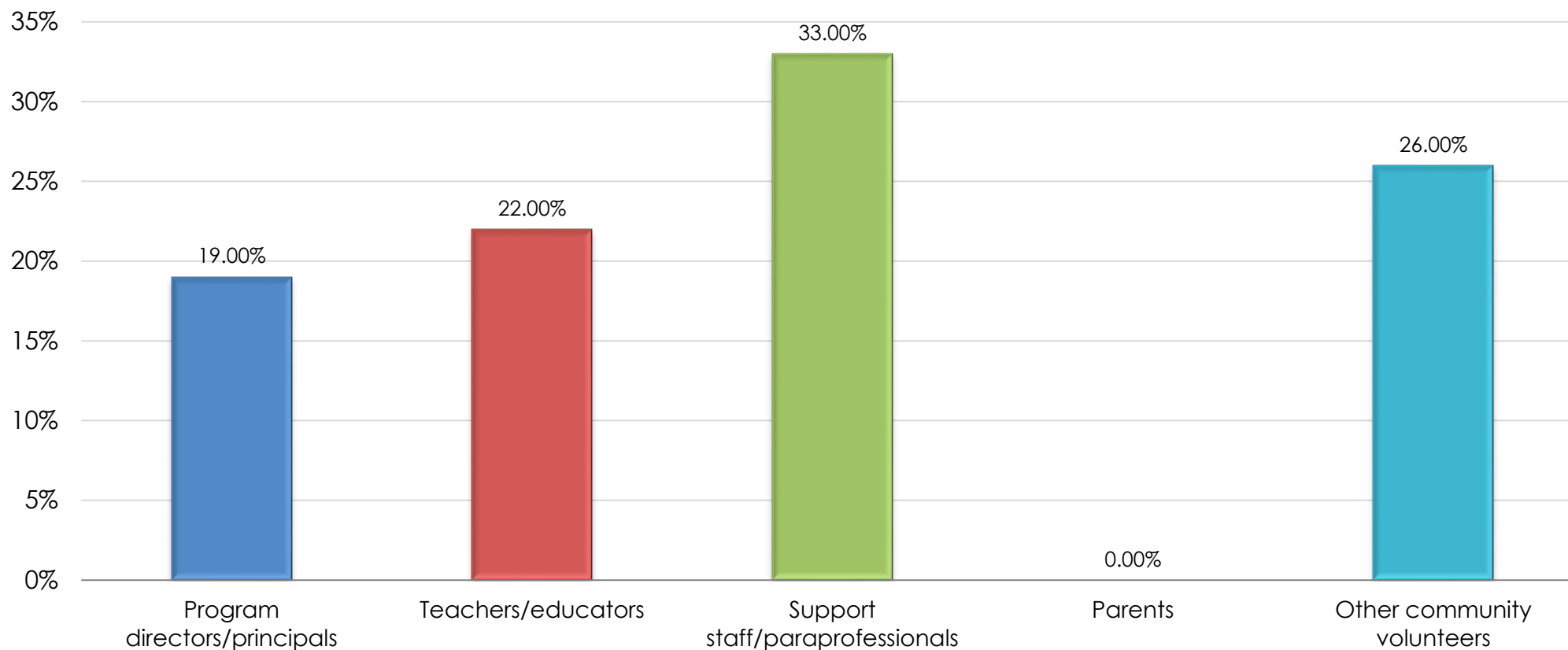




Participating Schools & Programs

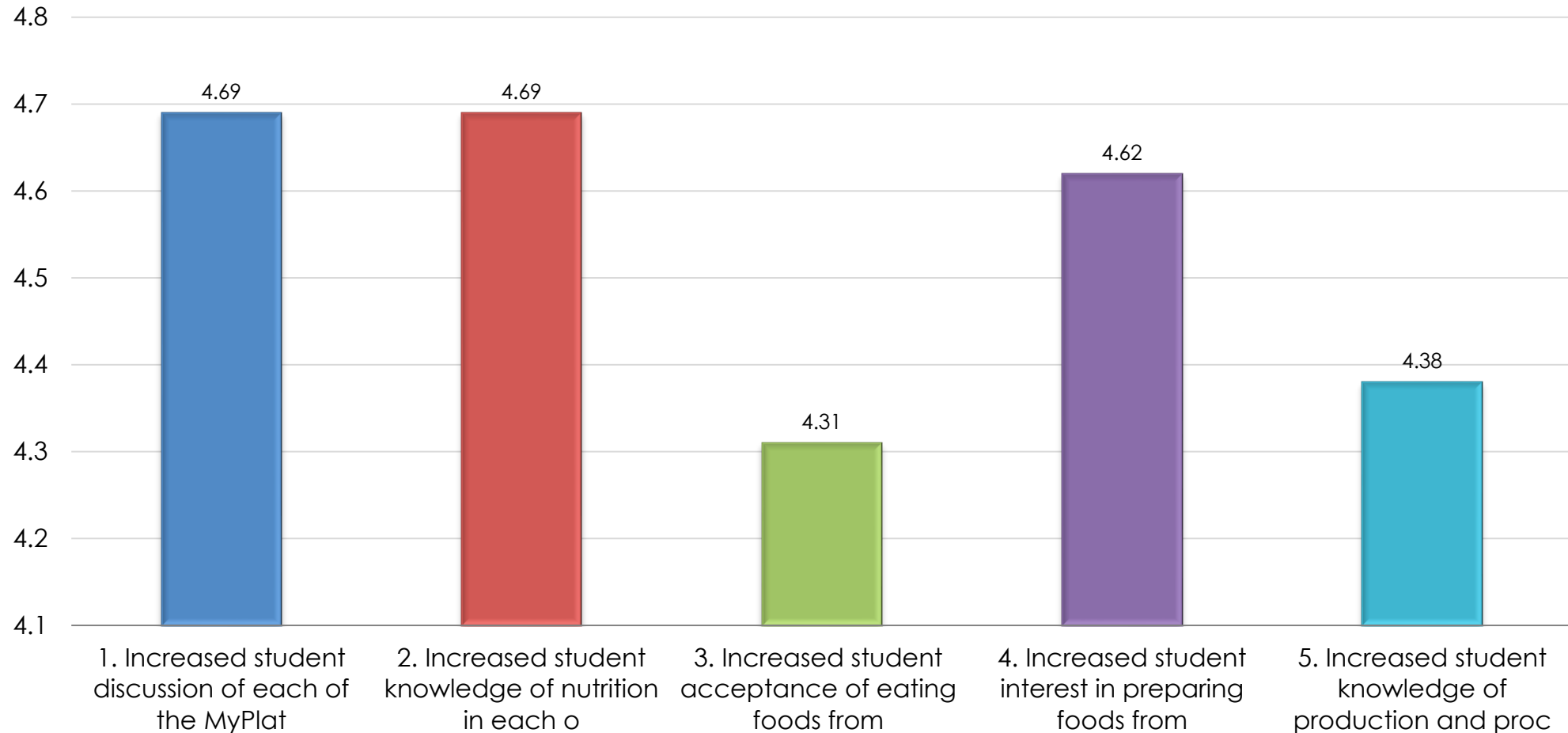
- Kungsi's Garden – Enemy Swim Day School
- Huron Middle School Gardening Program
- Summer Camp Coordinator
- First Step Child Care Center
- Boys & Girls Codington Club Kidscope Site – Watertown
- Boys & Girls Club of Hot Springs
- Boys & Girls Club of Lead-Deadwood
- Volunteers of America
- Sioux YMCA
- Kids Inc. – Sioux Falls School District
- Waubay Elementary
- SDSU Extension – Charles Mix County
- Patrick Henry Middle School

Tell us about others who assisted you as you delivered the lessons. Do not count yourself.

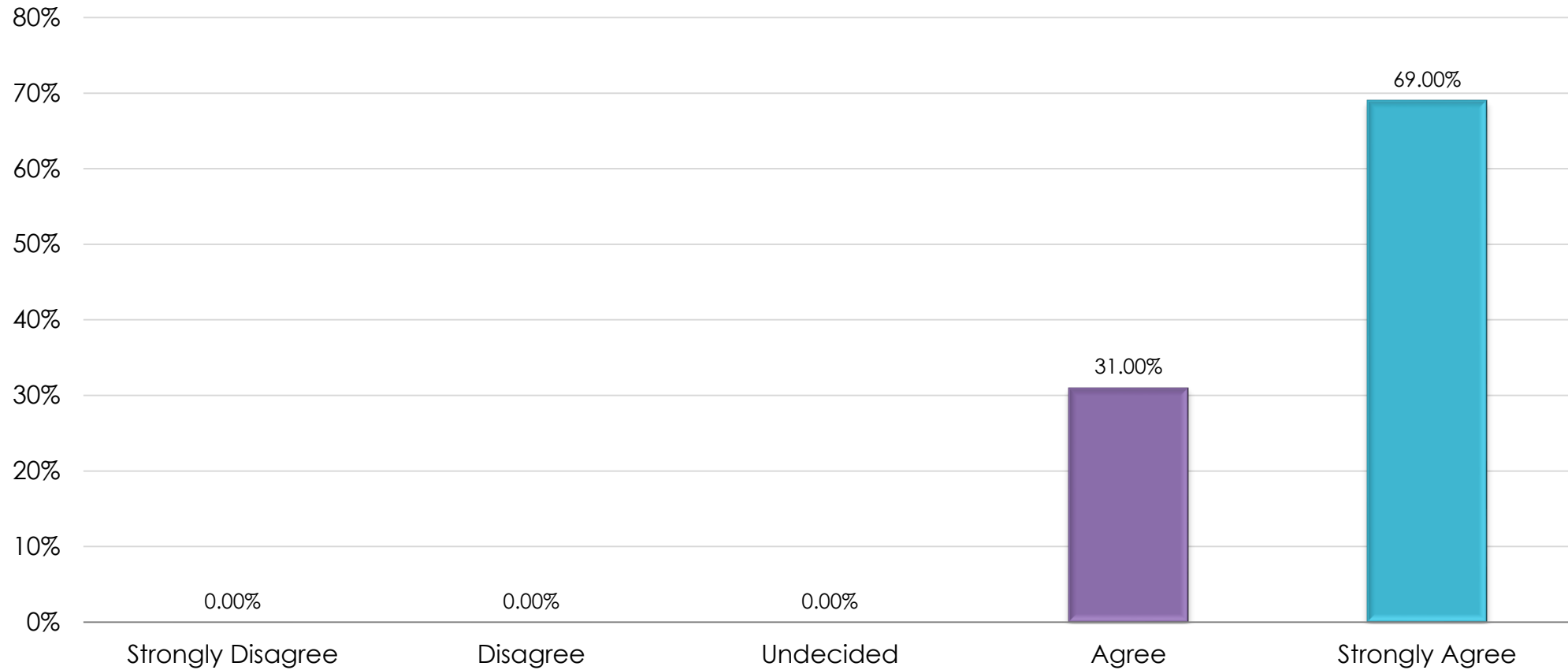


Mean : 2.926 | Confidence Interval @ 95% : [2.383 - 3.469] | Standard Deviation : 1.439 | Standard Error : 0.277

Results of the Farmers Grow MyPlate sub-grant activities with students in my classroom include:

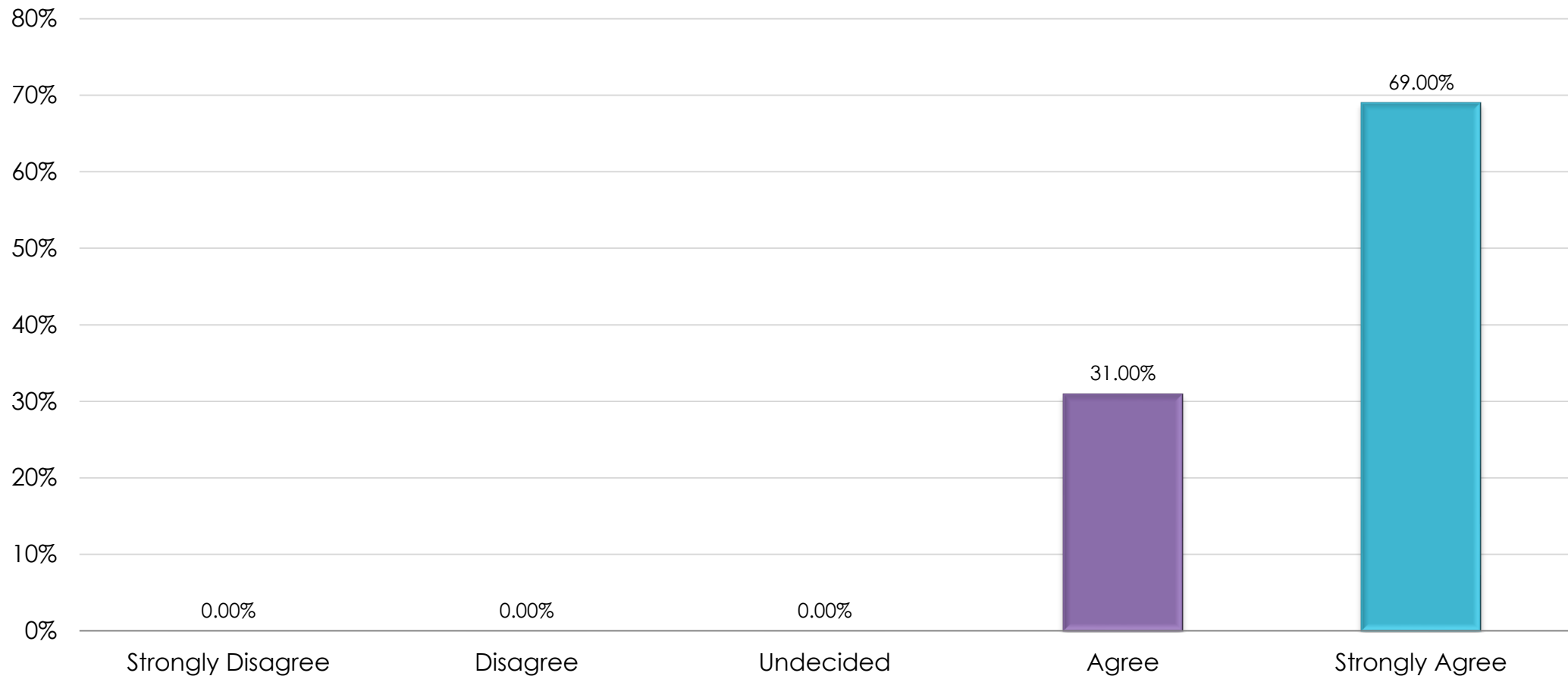


Increased student discussion of each of the MyPlate Food Groups



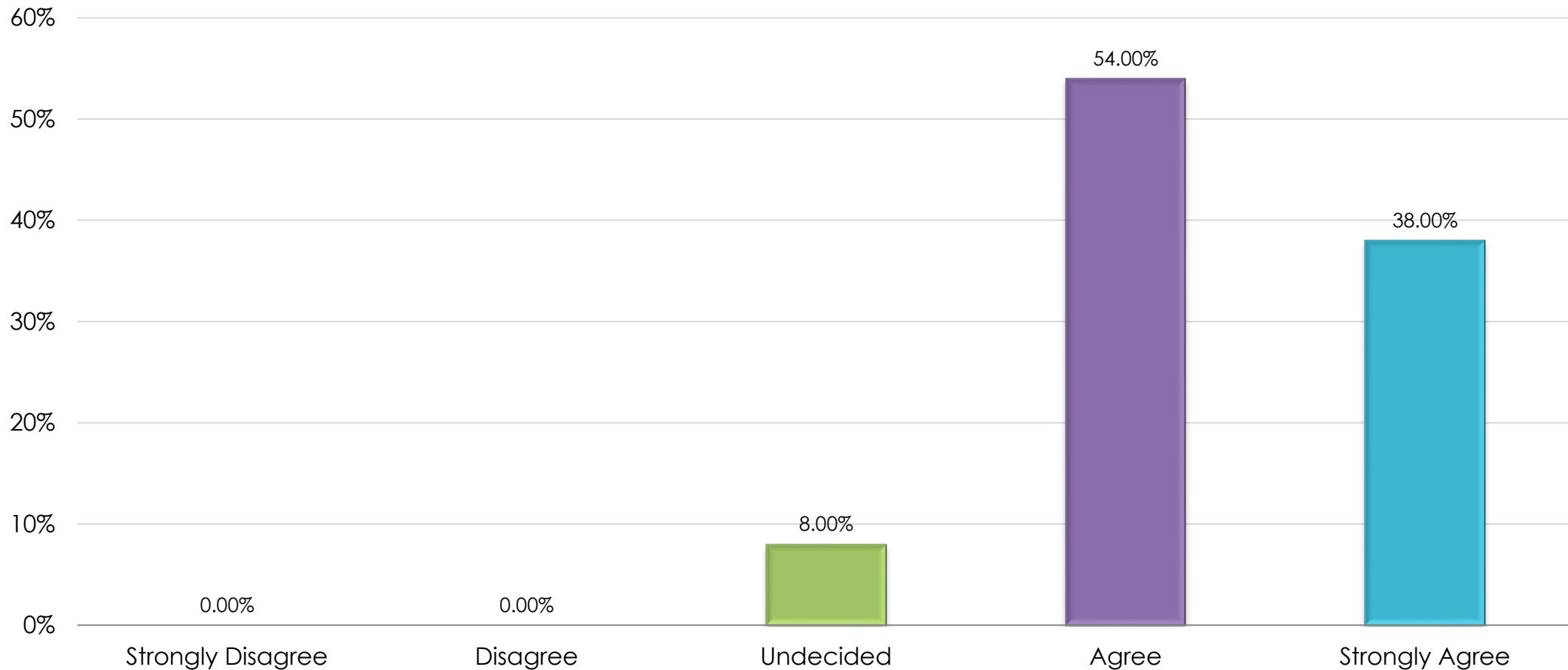
Mean : 4.692 | Confidence Interval @ 95% : [4.431 - 4.953] | Standard Deviation : 0.480 | Standard Error : 0.133

Increased student knowledge of nutrition in each of the MyPlate Food Groups.



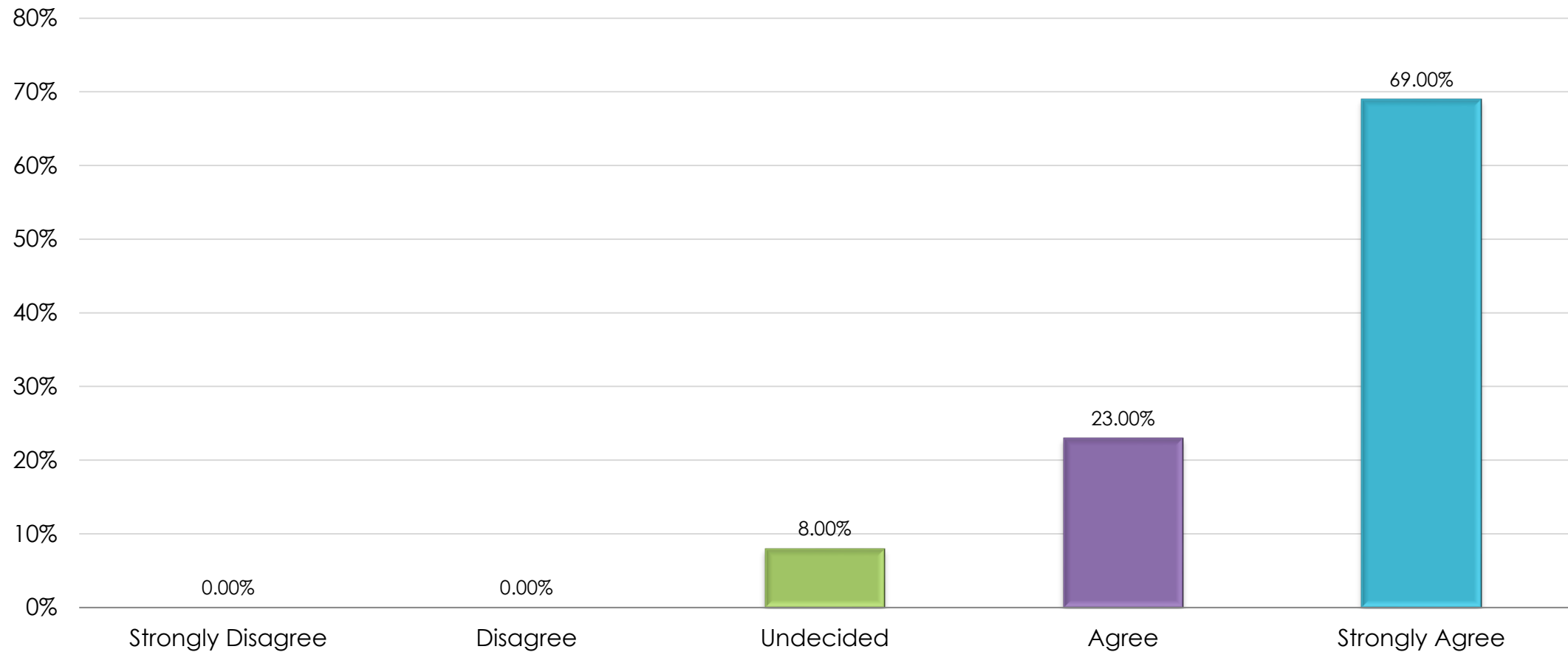
Mean : 4.692 | Confidence Interval @ 95% : [4.431 - 4.953] | Standard Deviation : 0.480 | Standard Error : 0.133

Increased student acceptance of eating foods from each of the *MyPlate* food groups.



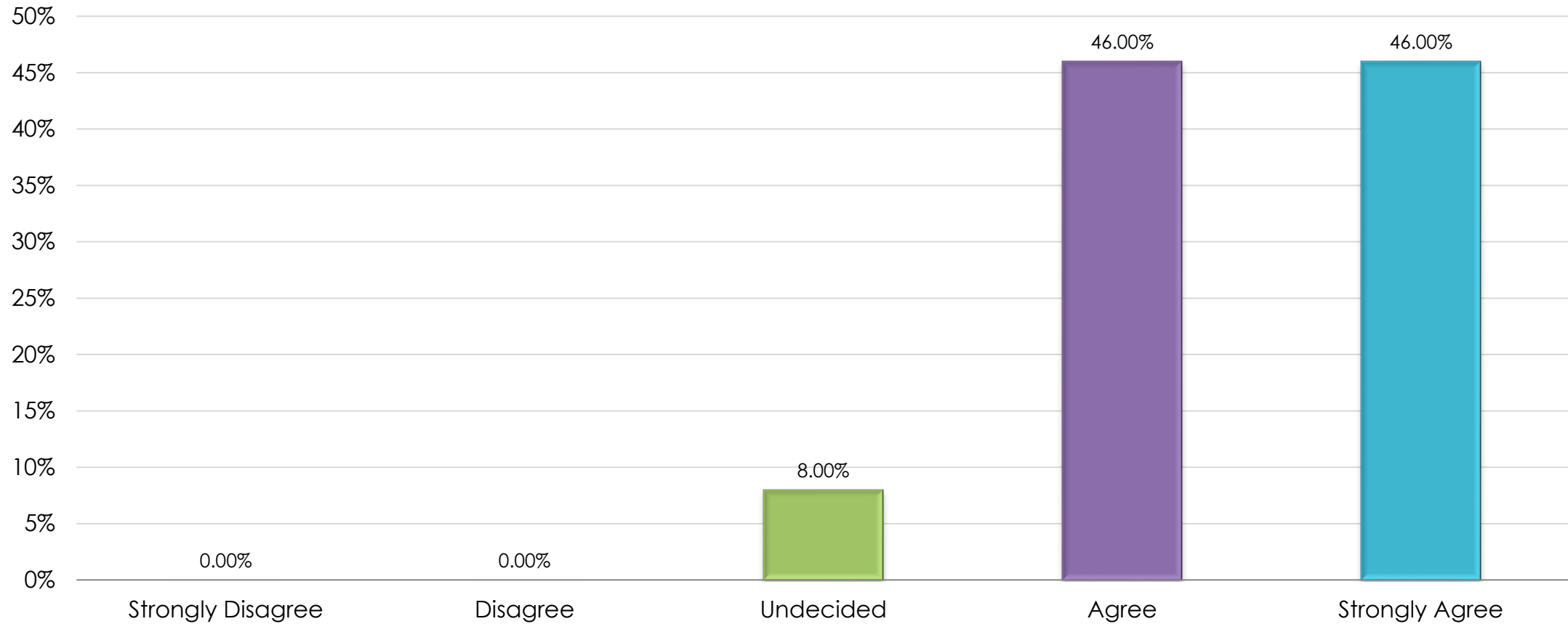
Mean : 4.308 | Confidence Interval @ 95% : [3.965 - 4.650] | Standard Deviation : 0.630 | Standard Error : 0.175

Increased student interest in preparing foods from each of the *MyPlate* food groups.



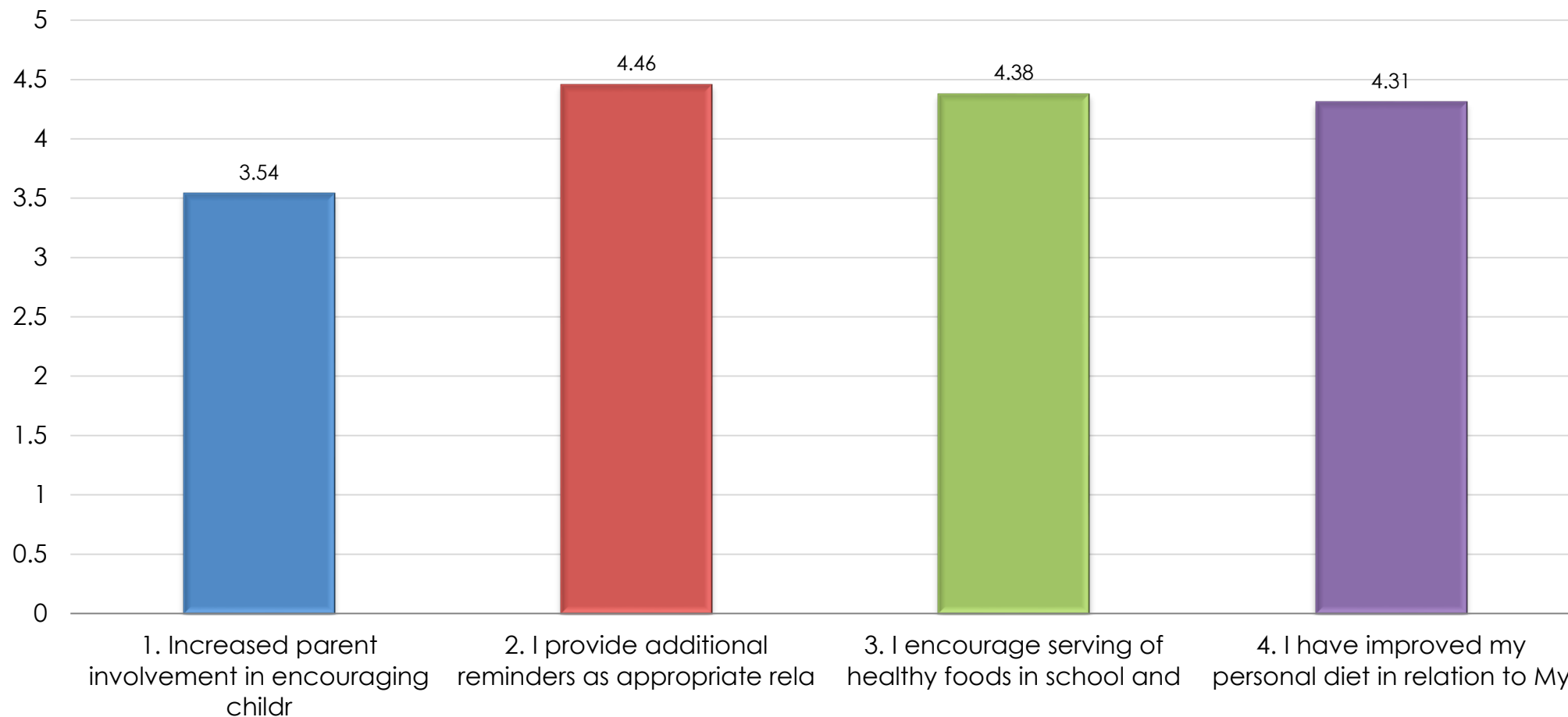
Mean : 4.615 | Confidence Interval @ 95% : [4.262 - 4.969] | Standard Deviation : 0.650 | Standard Error : 0.180

Increased student knowledge of production and processing of food from *MyPlate* food groups.

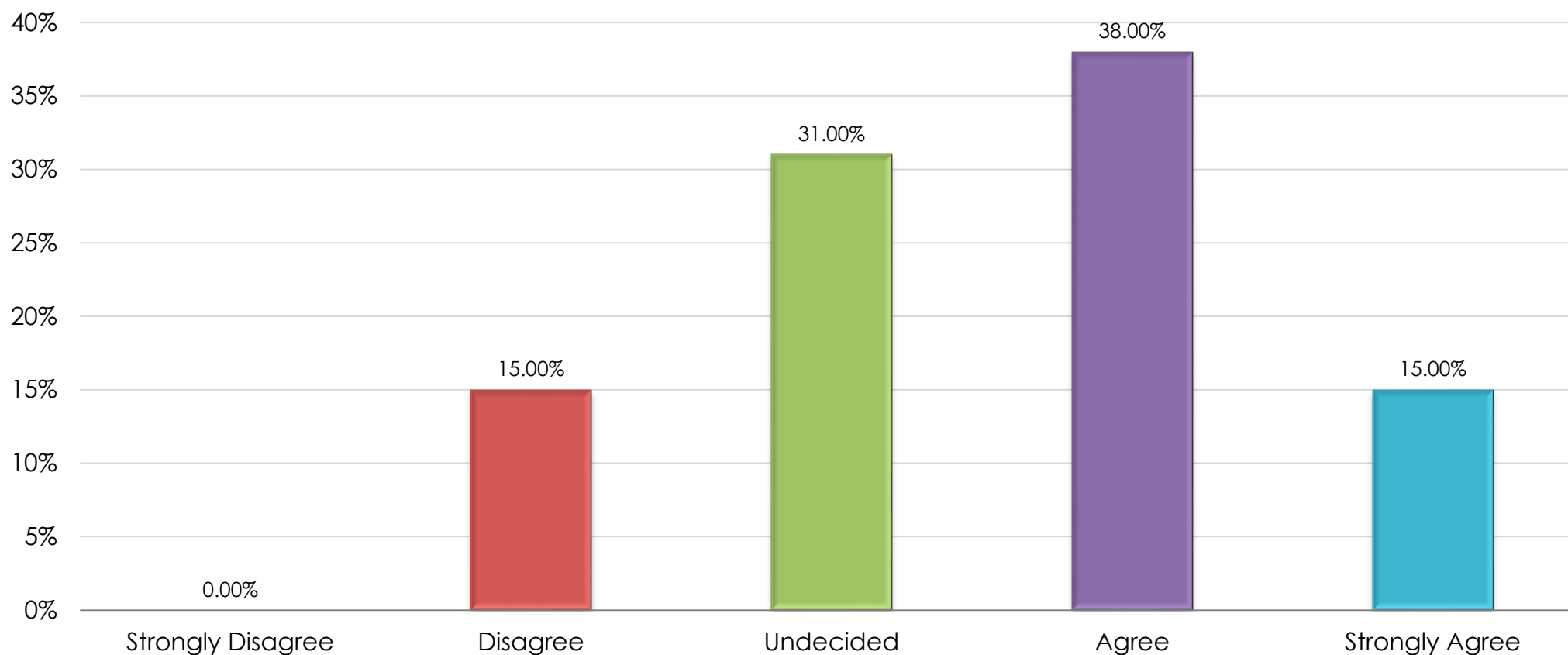


Mean : 4.385 | Confidence Interval @ 95% : [4.031 - 4.738] | Standard Deviation : 0.650 | Standard Error : 0.180

Results of the Farmers Grow MyPlate sub-grant activities in my classroom include:

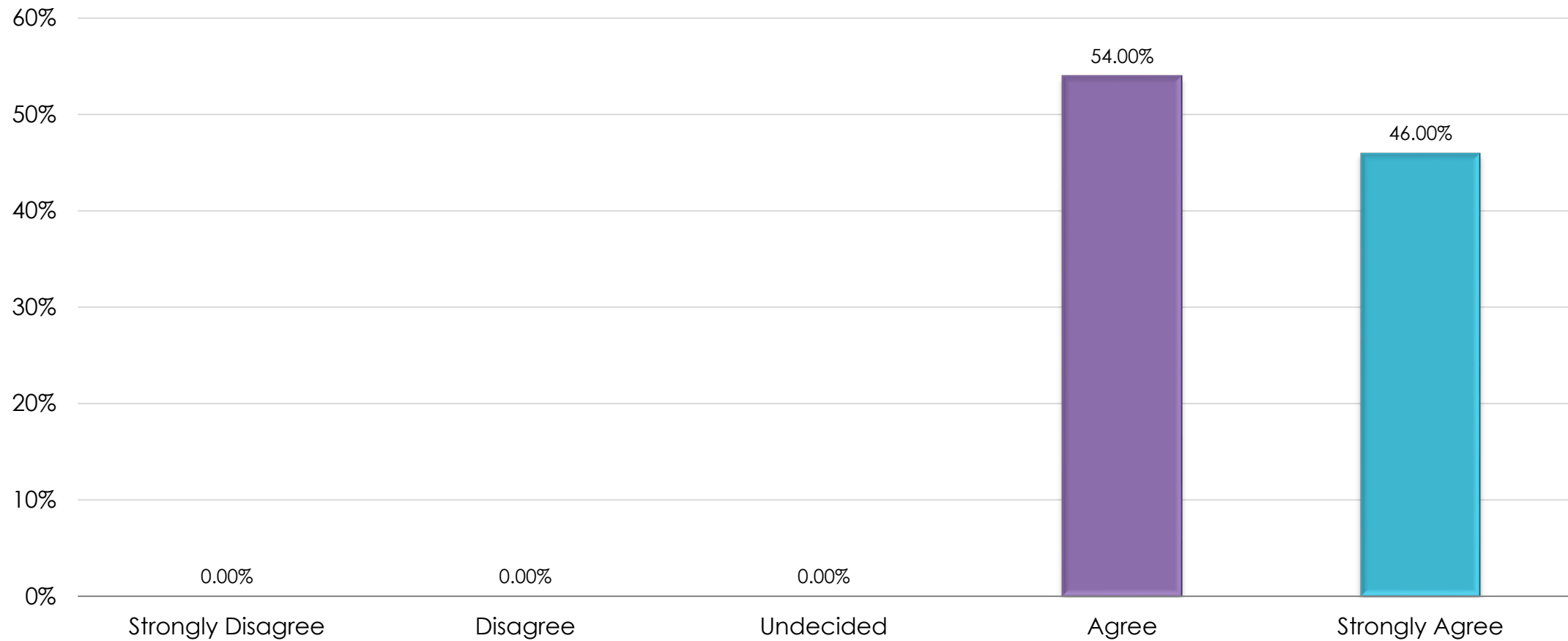


Increased parent involvement in encouraging children to eat healthfully and prepare food



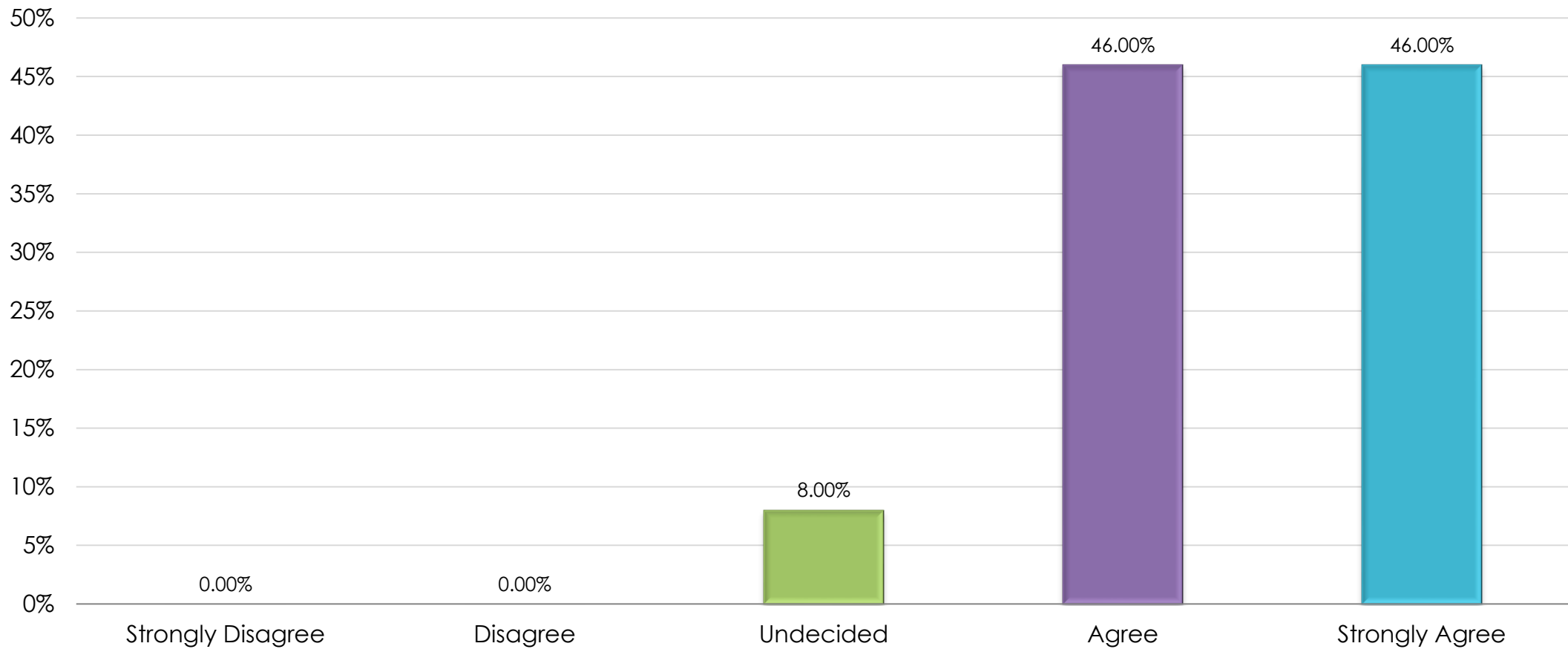
Mean : 3.538 | Confidence Interval @ 95% : [3.013 - 4.064] | Standard Deviation : 0.967 | Standard Error : 0.268

I provide additional reminders as appropriate related to healthy eating



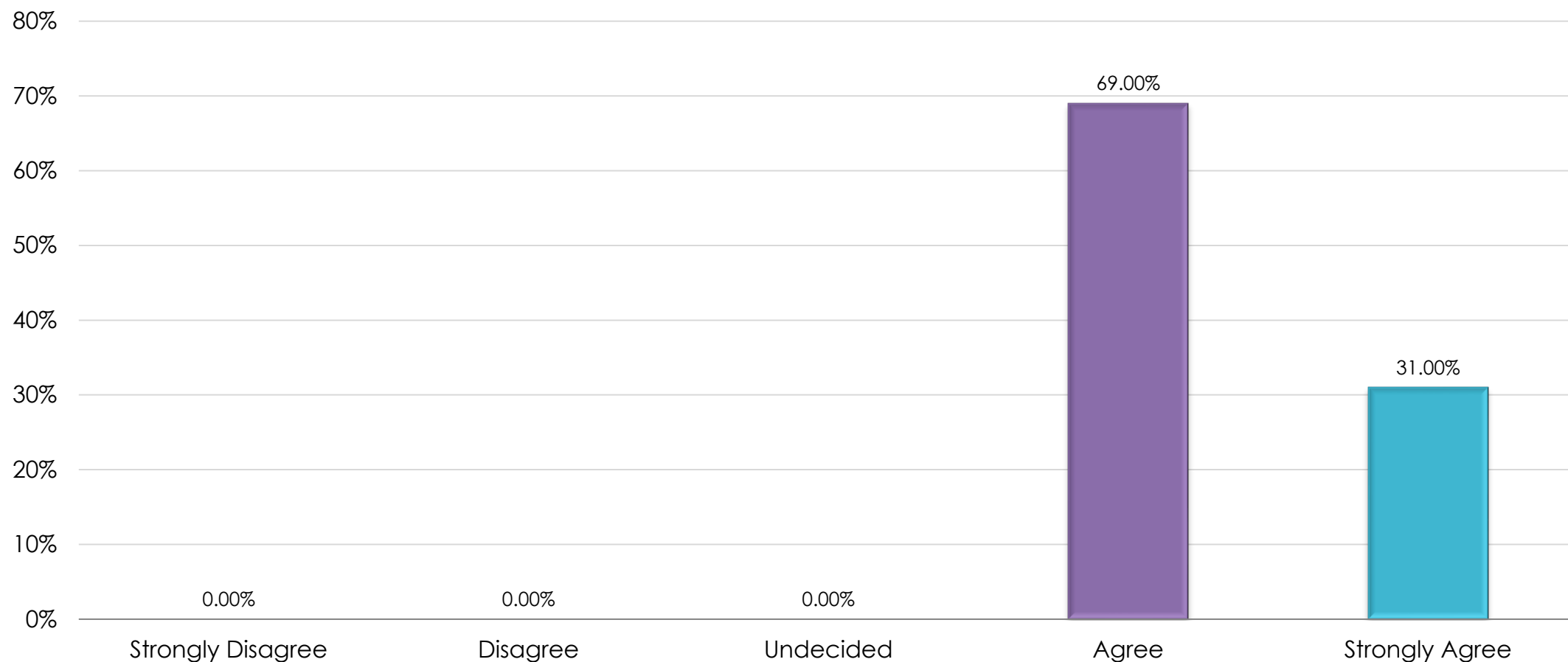
Mean : 4.462 | Confidence Interval @ 95% : [4.179 - 4.744] | Standard Deviation : 0.519 | Standard Error : 0.144

I encourage serving of healthy foods in school and in class events



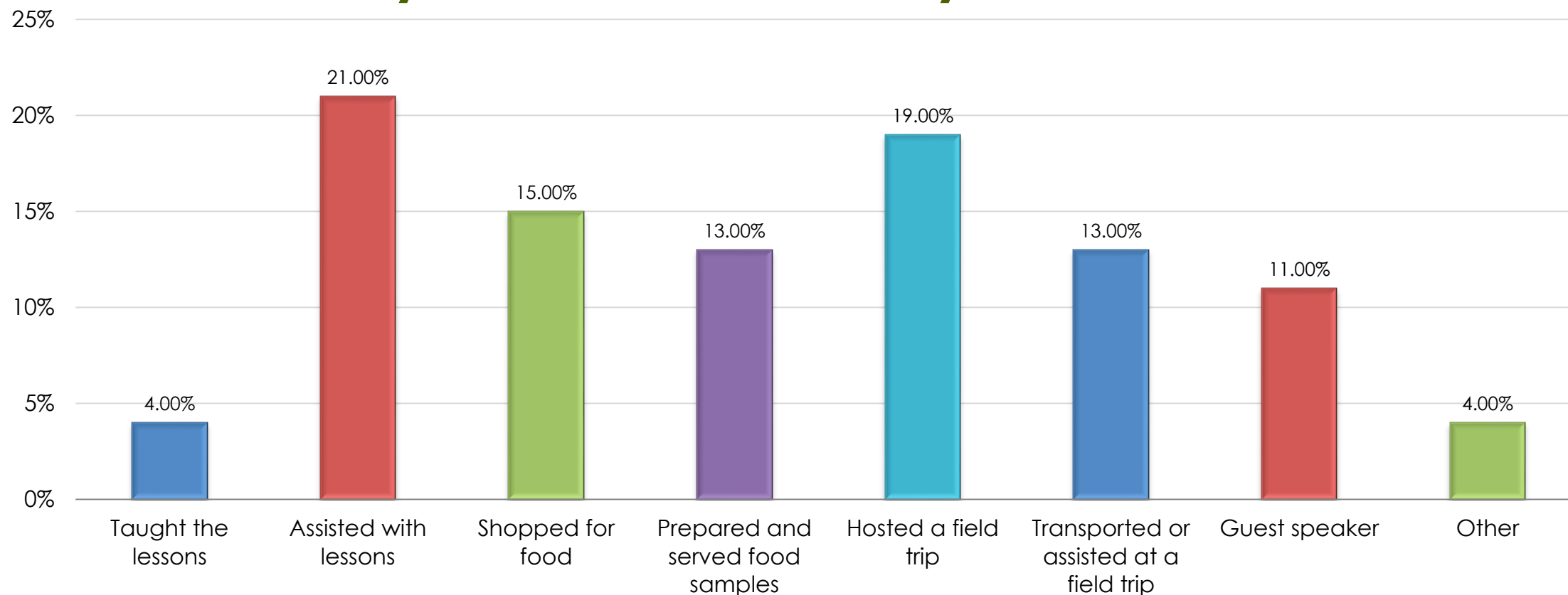
Mean : 4.385 | Confidence Interval @ 95% : [4.031 - 4.738] | Standard Deviation : 0.650 | Standard Error : 0.180

I have improved my personal diet in relation to MyPlate guidance



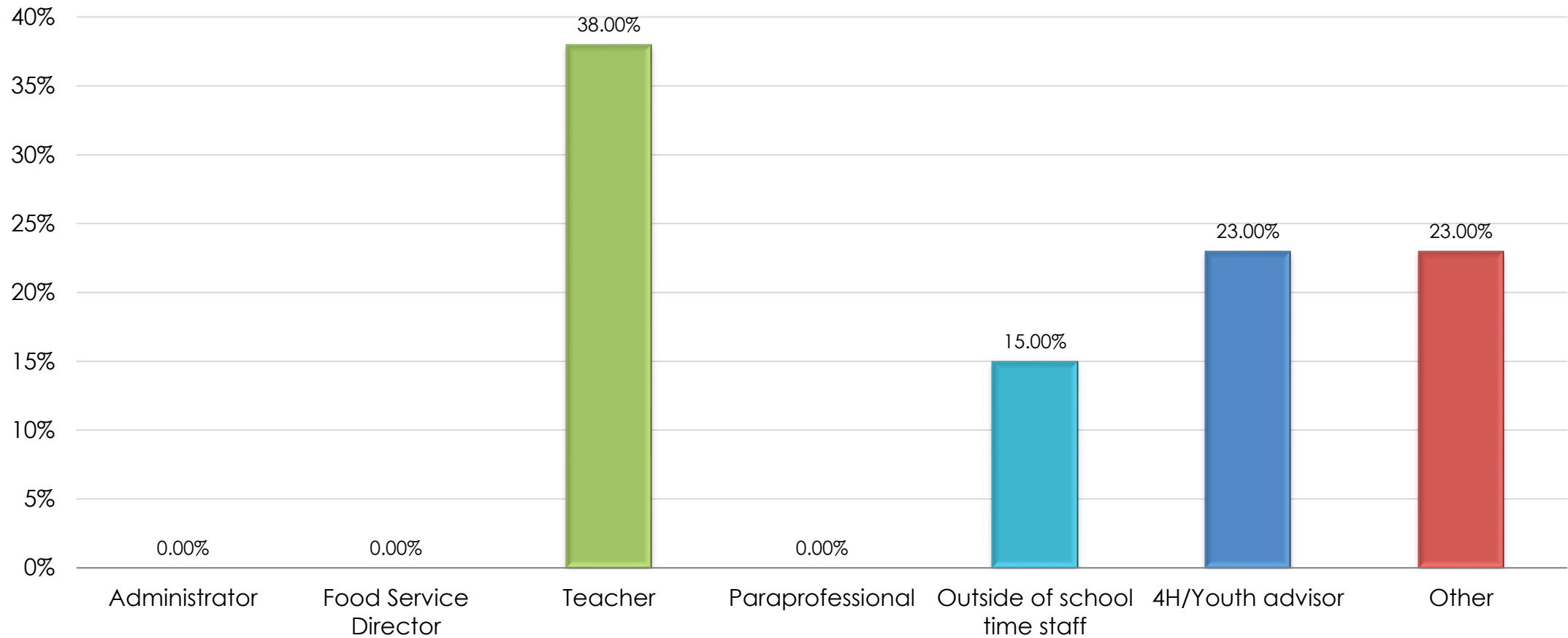
Mean : 4.308 | Confidence Interval @ 95% : [4.047 - 4.569] | Standard Deviation : 0.480 | Standard Error : 0.133

How were school o agency partners (parents, volunteers, grocery store) involved in Farmers Grow MyPlate activities in your classroom?



Mean : 4.234 | Confidence Interval @ 95% : [3.681 - 4.788] | Standard Deviation : 1.936 | Standard Error : 0.282

My role at my school or agency is:



Mean : 4.923 | Confidence Interval @ 95% : [3.996 - 5.850] | Standard Deviation : 1.706 | Standard Error : 0.473

Comments from implementers of Farmers Grow MyPlate?

Response

I like the program and find it is easily adaptable to different age groups and abilities.

We would often use program principals to direct dinner preparation, etc.

That was my initial plan (to do 5 weeks of lessons), however there is so much good information and activities that I spent the majority of the summer talking about it.

Farmers Grow MyPlate was a great curriculum and easy to align with Common Core Standards.

The program provided efficient materials and directions.

My class enjoyed all the videos and factual information. They were very interested in where their food came from.

We did stretch the lessons to include more food preparation and additional recipes because of our long day.

Explain how activities begun under the sub-grant will continue.

Response

"Plan to continue to teach nutrition next summer... They had so much fun and learned a lot. Even the support staff told me they learned new nutrition information and tried new foods."

"We have had so much fun preparing the food that the kids at the club learned about from Farmers Grow our Plates, that we have started a healthy Cooking Club to continue creating more foods for our snack time in the afternoon. They are more aware of what kinds of foods are healthy for us all."

"We will continue to use materials to augment our existing nutrition program. We stretched lessons to include additional recipes and get more youth involved in meal preparation. We will revisit individual lessons as they pertain to other curriculum and programs -- i.e. soil samples for our community garden, etc."

"Children will participate more in preparing healthy snacks and meals. They will continue to have more of an awareness of where their food comes from."

This is a fantastic program! I certainly can't wait to start this whole program back up next month with another group of amazing kids!"

Other Comments or Suggestions:

Response

"Again, thank you so much for providing the means by which our students could participate and learn about another aspect of the new country they are calling home! We couldn't have done it without your gift!"

"I think that the guest speakers and field trips would have been fun, however in our particular area they were not available. I really appreciated the videos to show the kids. I feel like it gave them a better understanding of where food comes from and the process it goes through to get to the grocery store."

"I felt that most of the activities were about just right for the group I had, which were students going into 3rd grade this upcoming school year. I am glad that I did not have a mixed age-group, especially with Kindergarteners, because it was a lot of planning already without having to modify activities for different ages."